

CLAIMS

1. Shoe, adjustable, transpiring, cushioning characterized in that the sole comprises an insole with through holes constituting the bottom of the shoe, a tread with one-way expulsion valves and an elastic intermediate structure with a plurality of small chambers placed side by side, each of which communicates, through a one-way valve, here called a suction valve, with the inside of the shoe and by means of an expulsion valve in the tread communicating with the outside, and in that at each step, when the foot presses on the ground with consequent yielding due to compression and flexion of said intermediate structure, automatic closure takes place of said suction valve and compression of the air contained in the chambers and therefore its transfer outside through the expulsion valves while, when the foot is raised from the ground, automatic closure takes place of the expulsion valves and opening of the suction valves with transfer inside the chambers through said suction valves, connected to the holes in the insole, of the air contained in the shoe mixed with perspiration and heat.
2. Shoe as in claim 1,
- 20 characterized in that the chambers are formed at their full height from the intermediate structure, comprising an upper base, peripheral ribbing and a network of internal ribs, glued onto the tread.
3. Shoe as in claim 2,
characterized in that the peripheral and internal ribs are thin.
- 25 4. Shoe as in claim 2,
characterized in that the internal ribbing is inclined in order to facilitate flexion under pressure created by the foot.
5. Shoe as in claim 2,
characterized in that the internal ribbing is curved in order to facilitate
- 30 flexion under pressure created by the foot.
6. Shoe as in claims 1 and 2,

characterized in that the suction valves are formed of small tubes, in a single piece with the intermediate structure, substantially laid along an internal wall of the ribbing and open above at the position of the holes that pass through the insole, there being on the internal surface

5 of the tread, in line with and at a short distance from each of said tubes, cone-shaped protrusions with a mean diameter corresponding to the internal diameter of said tubes, so that when the foot begins to press on the ground, and due to elastic flexion of the intermediate structure, the ends of said tubes make contact with said cone-shaped

10 protrusions causing said suction valves to close.

7. Shoe as in claim 6,

characterized in that the tubes of the suction valves are replaced by ducts created inside the ribs on the intermediate structure.

8. Shoe as in claim 1,

15 characterized in that the expulsion valves are membranes with cross-wise cuts, their thickness being the greater and their height the lesser according to the degree of force programmed for opening them.

9. Shoe as in claim 8,

characterized in that the membranes are discoid.

20 10. Shoe as in claim 8,

characterized in that the membranes are cone-shaped.

11. Shoe as in claim 8,

characterized in that the membranes are cap-shaped.

12. Shoe as in claim 1,

25 characterized in that dimensions of decisive parts of the sole such as its height, the height of the intermediate elastic structure, volume of the chambers, dimensions and thickness of suction and expulsion valves and therefore volume of transpiration air and forces required to operate the valves, are pre-set according to the type of shoe and

30 therefore according to cases involving high levels of stress in sports, in military use, or in ordinary walking, for children, for tall boots, for orthopaedic purposes.